

**Abstract.** The purpose of the study is to identify the effect of grassland crop rotation crops on the physical, agrobiological parameters of soils and on crop productivity in the forest-steppe zone of the Republic of North Ossetia–Alania. Tasks of the experiment: to study the structural and aggregate composition of the soil; to determine the volume mass of the soil under crop rotation crops; to identify the general biological activity of the soil; to identify the effect of crop rotation crops on productivity. The object of the study is the crops of the grassland crop rotation. The research was carried out in the field stationary crop rotation of the NCMPARI VSC RAS in the conditions of the forest-steppe zone of the RNO–A. The soil of the experimental site is represented by leached chernozems on pebbles, where humus ranges from 3.4 to 4.7%. The experiments were carried out in triplicate. The area of the experimental plots is 100 m<sup>2</sup> and registration plot is 96m<sup>2</sup>. It was found that at the beginning of the growing season, the lumpy fraction under crop rotation crops varied from 13.50% to 50.10%, and soil lumps from 0.25 to 10 mm (macrostructure) – from 49.40% to 82.60%, fraction